1975

Friedrich A. Hayek and the Science of Choice

Gerald P. O'Driscoll Jr.
Iowa State University

Friedrich A. Hayek and the Science of Choice

Abstract
The title of this paper may suggest that the subject matter of this paper could have little to do with the problem of economic fluctuations or the business cycle. If the argument of this paper is correct, however, then question of the compass of economics is intimately connected with the problem of cyclical fluctuations. But demonstrating this connection requires answering a preliminary question. This paper will, therefore, be divided into three parts...

Disciplines
Behavioral Economics | Business Administration, Management, and Operations | Economic Theory | Statistical Models

Friedrich A. Hayek and the Science of Choice

Gerald P. O'Driscoll, Jr.

Assistant Professor of Economics

No. 24

Introduction

The title of this paper may suggest that the subject matter of this paper could have little to do with the problem of economic fluctuations or the business cycle. If the argument of this paper is correct, however, then question of the compass of economics is intimately connected with the problem of cyclical fluctuations. But demonstrating this connection requires answering a preliminary question. This paper will, therefore, be divided into three parts.

In the first part, I address myself to the question of why the American Economics Association (as opposed to the History of Economics Society) should sponsor a session on Friedrich A. Hayek. Seemingly, the most that can be argued is that economists have underestimated Hayek's contributions to the neoclassical edifice; and that the Nobel Memorial Prize in Economics, awarded in 1974 to Hayek as co-recipient (with Gunnar Myrdal), rectified this oversight. Moreover, Professor Machlup has recently supplied us with a detailed account of these achievements.[1]

In the second part of this paper, the connection between this preliminary question and the main subject - Hayek's theory of economic fluctuations - is made apparent, if not plausible. And in the third part, Hayek's work on economic fluctuations is finally examined in some detail.

---

[1]Cf. Fritz Machlup, "Friedrich von Hayek's Contributions to Economics," Swedish Journal of Economics, 76 (1974), 498-531.

I: Hayek and the Neoclassical Paradigm[2]

One of the most exciting developments in the methodology of the social sciences has been the assault on "dogmatic-falsificationism," that misinterpretation of the central thesis of Popper's work, which misinterpretation has so misguided thinkers as to the nature of scientific progress.[3] Methodologists of science have finally accepted that what scientists say they do is not a reliable basis for understanding what they in fact do.[4] In turn, though the work of methodologists must be informed by knowledge of

---

[2]Though I object vigorously to the use of 'neoclassical' in relation to current economic orthodoxy, I will nonetheless perpetuate this solecistic usage in this paper. The neoclassical economists were, of course, that triumvirate, Carl Menger, William Stanley Jevons and Léon Walras, and their followers, who overthrew the paradigms of classical economics (really Ricardian economics); and who substituted marginalist and subjectivist economics in its stead. The orthodoxy with which this paper is concerned would be more appropriately designated as neo-classical, or post-neoclassical (a phrase suggesting a certain symmetry with 'post-Keynesian').

[3]The author's first acquaintance with these developments was Imre Lakatas and Alan Musgrave, eds., Criticism and the Growth of Knowledge (London: Cambridge University Press, 1970); especially, Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," pp. 91-196 of that volume. On the question of how Popper has been misinterpreted, cf. Lakatos, pp. 180-84.

"The hallmark of dogmatic falsificationism is then the recognition that all theories are equally conjectural. Science cannot prove any theory. But although science cannot prove, it can disprove: 'it can perform with conplete logical certainty [the act of] repudiation of what is false,' that is, there is in an absolutely firm empirical basis of facts which can be used to disprove theories." Lakatos, p. 96

[4]The methodology of 'science' here refers specifically to the 'hard' sciences. Lakatos' ideas were only just being extended to the social sciences at the time of his death in 1974.

the history of scientific development, and by the sociology of scientific knowledge, this work is essentially normative. The methodology of science deals with science at its best, not with hack science.[5]

The conclusions of this methodological work that are of most interest concern the competitiveness of scientific paradigms, or scientific research programmes, in Lakatos' terminology. A research programme consists of a series of connected theories, each of which succeeds the other, as a virtual reformulation of the first theory, under the weight of anomalies. Lakatos has replaced the concepts of falsifiability and operationalism with the "requirement of continuous growth"; and he has concluded that: "Mature science consists of research programmes in which not only novel facts but, in an important sense, also novel auxiliary theories are anticipated; mature science - unlike pedestrian trial-and-error - has 'heuristic power.'"[6]

Of still more immediate concern here is Lakatos' observation that: "The history of science has been and should be a history of competing research programmes (or, if you wish, 'paradigms'), but it has not been and should not be a succession of periods of normal science: the sooner competition starts, the better for progress."[7] Science "has been and

---

[5] 'Hack science' is used by John Watkins to refer, by implication, to that kind of scientific activity that Thomas Kuhn has designated "normal science." Lakatos also uses the term in a pejorative sense to refer to those fact-gatherers who work within, but never question a scientific paradigm. Cf. John Watkins, "Against 'Normal Science,'" p. 27 in Lakatos and Musgrave; and Lakatos, p. 152.

[6] Lakatos, p. 175. On the concept of heuristic value, particularly positive heuristic value, cf. Lakatos, pp. 134-38. Lakatos notes there (on p. 137) that: "We must appraise research programmes....for their heuristic power: how many new facts did they produce, how great was 'their capacity to explain their refutations in the course of their growth.'" (footnote reference omitted)

[7] Lakatos, p. 155.

should be" a history of competing research programmes because the 'facts' are not made present to the human mind independently of theories ("observational theories") within which these facts are interpreted.[8] The decision criteria for choosing between rival research programmes are complex, and these criteria must relate to Lakatos' concept of continuous growth. Competition provides the climate for this growth. Logical positivism (more precisely: "dogmatic falsificationism"), with its simple criterion of falsifiability, is dead and the burial is in progress.

The implications for economists' attitude toward their discipline are immediate and apparent. Economists have considered it a hallmark of science that research develops in a common paradigm. Divergent and competing schools of thought have been eschewed, because their existence has been thought to characterize the pre-scientific era of that discipline. Paradigms are changed slowly, if at all. Scientific Revolutions are to be deplored, because they upset the slow accretion of scientific knowledge. The state of scientific knowledge can be summarized in the latest textbooks, written, as they are, within the current paradigm; and incorporating (at least at publication date), as they do, the latest facts discovered by application

---

[8] "...No factual proposition can ever be proved from an experiment. Propositions can only be derived from other propositions, they cannot be derived from facts: one cannot prove statements from experiences - 'no more than by thumping the table.' This is one of the basic points of elementary logic, but one which is understood by relatively few people even today." Lakatos, p. 99. Footnote reference to Popper omitted. On the general problem of dogmatic falsificationism, cf. Lakatos, pp. 95-103.

of that paradigm. This above is the 'textbook' view of science and economics.[9]

It cannot be overemphasized that, if Lakatos' views are correct, the attitude of many economists on the non-competitiveness of paradigms is not merely unscientific, but anti-scientific. The view ignores at once the history of scientific progress; and the view is the virtual negation of the normative rules of that progress. Indeed, to extend somewhat Lakatos' own argument, I would contend that this characteristic view of science rather harks back to the religious dogmation of medievalism, from which science was to emancipate mankind.[10]

Where does this leave us in answering the original question of why we should honor the contributions of one man (i.e., F. A. Hayek) to the neoclassical paradigm? The answer is that we should not honor him if this was indeed his accomplishment. But to conceive of Hayek's contributions to economics as mere additions to the neoclassical research programme would be mistaken. Though some of his work, like The Pure Theory of Capital, does represent important, if largely unrecognized, contributions to the neoclassical research programme, Hayek's major contributions to economics is

---

[9]The argument of this section parallels that of Murray Rothbard's provocative essay, "Ludwig von Mises and the Paradigm of Our Age," in Egalitarianism as a Revolt Against Nature (Washington: Libertarian Review Press, 1974), pp. 134-46; especially pp. 134-35. Rothbard refers to the 'textbook' view of science as the "whig theory of the history of science."

[10]Indeed, Lakatos himself has pointed out that his position is a call for "methodological tolerance." It should be obvious at this point that the author accepts - in the large - Lakatos' analysis of the methodological problems of the sciences. But it would be beyond the scope of this paper to defend the thesis. The interested reader is directed to Lakatos for this.

The 'orthodox' view of economics (which I am criticizing) treats economics as "Normal science." Popper has remarked that normal science the activity of ... the not-too critical professional... In my view the 'normal scientist,' as Kuhn describes him, is a person one ought to be sorry for... [He] has been taught badly." Karl Popper, "Normal Science and its Dangers," p. 52 in Lakatos and Musgrave. Watkins has drawn the explicit parallel between Kuhn's science and theology or religion: "...Kuhn sees the scientific community on the analogy of a religious community and sees science as the scientist's religion." Watkins, p. 33.

in offering a competing and progressive scientific research programme with positive heuristic value. This programme represents a competitive alternative to the neoclassical paradigm; and an alternative that at least in some respects is superior to that paradigm.[11] In sharing common roots with the current orthodoxy, Hayek's programme shares some of the desirable features of neoclassical economics. But he has progressed where neoclassical, particularly neo-Walrasian, economics has stalled.

In the dominant view of science, to continue to work within an alternative research programme is a failing: one that might even put one outside the pale of science. To state the problem baldly, I suspect that a good many economists were incredulous at Hayek's being designated as co-recipient of the Nobel Memorial Prize in Economics, because they doubted his work is altogether scientific.[12] The source of the doubt would be the recognition that his contributions do not always fit well in the current, neoclassical research programme. What Lakatos has taught us is that this might not be a failing, but might be an accomplishment worthy of praise, perhaps even a Nobel Prize. Lakatos has reminded economists that competition is beneficial, even (especially) in research programmes.

---

[11] My objection to Machlup's treatment of Hayek's contributions is that Machlup fails to note the competing nature of Hayek's paradigm. I would also disagree with Machlup's emphasis on those contributions that are most neoclassical in nature (e.g., The Pure Theory of Capital). Monumental though these contributions are, I view them as the least important of Hayek's work. But in truth, Machlup's paper (see footnote 1) was intended to serve a very special purpose, which it obviously served very well.

[12] I am obviously not referring here to Hayek's later, political and legal work, which is not 'scientific' in the modern, narrow sense of that word. I am referring, rather, to his ostensibly economic work, which has been virtually ignored in recent years.

But of Hayek's later work, it must be remembered that he is the author of The Sensory Order, a study on theoretical psychology!

II: Economics - The Science of Choice?

The particular relevance for economics of these methodological considerations can best be illustrated by considering of the neoclassical programme. Identification of the quintessential feature of this paradigm is an easy matter: the study of the allocation of scarce means toward competing ends. The recognition of the ineluctable fact of scarcity of means leads to the recognition that choice is necessary. Economics becomes, then, the science of choice.

It may strike the reader as incredible that I would claim that Hayek denied that economics is the science of choice. This might seem particularly ironic, given the contributions of Austrians such as Wieser and Strigl to this very conception of economics. In fact, what Hayek specifically claimed was that a research programme studying only the implications of scarcity and choice would soon reach a dead end (i.e., would be a degenerating research programme).

Specifically, in his 1936 paper on the nature of economics, Hayek called for - in effect - a new research programme in which the Pure Logic of Choice would be isolated ("in all its purity") from the study of "causal processes."[13] In his 1945 paper, Hayek thought the (by then) traditional formulation of economics treated the economic problem as "purely one of logic": "If we possess all the relevant information, if we start out from a given system of preferences, and if we command complete knowledge of available means, the problem which remains is purely one of logic."[14] He then presented succinctly his objections to the then emergent neoclassical research programme:

---

[13]Hayek, "Economics and Knowledge," in Individualism and Economic Order (Chicago: University of Chicago Press, 1948), p. 35.

[14]Hayek, "The Use of Knowledge in Society," in Individualism and Economic Order, p. 77.

> ... The economic calculus which we have developed to solve this logical problem, though an important step toward the solution of the economic problem of society, does not yet provide an answer to it. The reason for this is that the 'data' from which the economic calculus starts are never for the whole society 'given' to a single mind which could work out the implications and can never be so given.[15]

Hayek's critique can be re-stated as follows. Economists start from the individual experiment and inquires into what a rational transactor does when confronted with scarcity. Economic theory answers the question by developing the principle of equalizing returns to given outlays at the margin. The principle is generalized for society as a whole, the motives of the individual are ascribed to the society as a whole, as though it existed as an entity; and the decision-making for that whole is analyzed as if carried out by one person.[16]

But the neoclassical research programme fails in what is surely one of the essential tasks of economics as a social science: for it fails to explain what Hayek called the "causal process" by which a system moves toward equilibrium. The programme fails to deal with the problem of economic coordination, simply because it literally assumes away the problem. More precisely, it defines away the problem of economic coordination: If society could meaningfully be treated as an entity maximizing output (utility), then there would be no problem of economic coordination whatsoever.

---

[15] Hayek, "The Use of Knowledge in Society," p. 77.

[16] I have benefitted from a reading of James M. Buchanan, "Is Economics the Science of Choice," in Erich Strissler, Gottfried Haberler, Friedrich A. Lutz and Fritz Machlup, Roads to Freedom (New York: Augustus M. Kelley, 1969), pp. 47-64. Buchanan develops his argument somewhat differently than do I; and he is chiefly concerned with a more narrowly defined problem - welfare economics.

The problem of social coordination consists, inter alia, of the attainment of those equilibrium states, concerning which neoclassical economics provides so many theorems. The classical economic concern with adjustment problem was seemingly lost in the solution of the paradox of value. The boundaries that preclude consideration of these causal processes in the neoclassical paradigm are largely self-erected.

To comprehend the problem of social coordination, economic theory must explain "the unintended or undesigned results of the actions of men."[17] That is, economics must re-capture some of Adam Smith's vision of the social economic problem. Economic theory is compelled, then, to explain how the separate (maximizing) decisions of individuals could lead to an over-all order that none of these individuals ever intended or designed. This vision of economics is the basis for an alternative research programme. It is a programme for which Hayek and others provided a foundation; and which Hayek developed in parts. It is to his consideration of one part of this programme - the study of economic fluctuations - to which I now turn.

---

[17]Hayek, The Counter-Revolution of Science (New York: The Free Press of Glencoe, 1955), p. 25.

III: Economic Coordination and Economic Fluctuations

The Problem and Its Setting

The failings of neoclassical economics have certainly been aired before. But criticism is not enough. Another research programme is needed in order to supplant an existing one, however flawed is the latter. But where others offer alternatives that scarcely seem to be improvements, Hayek suggested a separate research programme - catallactics, the theory of the market order.[18] His programme is most developed precisely in those areas where the neoclassical paradigm is most lacking: the theory of economic fluctuations; or the business cycle, as it used to be termed.

Until a few years ago, many economists would have confidently asserted that the business cycle is dead.[19] The problem of economic fluctuations has also been cast in choice-theoretic terms - 'society' chooses between rates of

---

[18] Hayek argues that 'economy' is a misnomer, which evidences confusion in thinking about the nature of the economic problem. Aristotle's Oeconomica dealt with decisions of a single household, to which the Pure Logic of Choice applies without modification. But an 'economy,' as we know it, involves separate and often conflicting plans of many households.

According to Hayek, the Greek verb katallatein (from whence 'catallactics') means not merely "to exchange," but also "to receive into the community" or "to turn enemy into friend." Cf. Hayek, "The Confusion of Language in Political Thought" (London: Institute of Economic Affairs, 1968), p. 29 and 29n.

Hayek's intellectual mentor, Ludwig von Mises, could perhaps be better credited with having developed catallactics, or the pure theory of catallaxy, in detail in one place (as Hayek has not). Cf. his Human Action, 3rd ed. (Chicago: Henry Regnery Co., 1966), Part Six: "Catallactics or Economics of the Market Society," pp. 232-715. If it were not to invite misinterpretation, one could characterize Mises' theory as the Austrian theory of general equilibrium.

[19] Cf. the recorded and edited comments by Paul Samuelson, in Victor Zarnowitz, ed., The Business Cycle Today (New York: Columbia University Press for the National Bureau of Economic Research, 1972), p. 167. The comments were made in September, 1970.

inflation and rates of unemployment. The choice is constrained by the feasible set confronting decision-makers at any moment.[20] Many economists will readily offer their judgments and respect to desirable rates of inflation and unemployment. In general, these judgments have cast doubts on the desirability of trading off more unemployment for less inflation.[21] For if the rate of unemployment is truly chosen (from an opportunity set), there is no need for cyclical downturns. What sane person would choose to produce a recession?[22]

Undoubtedly, fewer economists would today assert that the business cycle is dead -- "common sense cannot help breaking in."[23] Full-employment (at stable or rising prices) is an increasingly elusive goal. Policy makers, be

---

[20]The fact that must now add "at any moment" indicates how severely the original Phillips Curve hypothesis has been altered. Everybody's Phillips Curve dances and twists around now. But once it is admitted that curve moves (apparently) autonomously, it becomes dubious in what sense we can choose a rate of inflation and a rate of unemployment. The whole theoretical basis for viewing the rate of inflation and the rate of unemployment in terms of an opportunity set has been severely criticized by Axel Leijonhufvud. Cf. "Costs and Consequences of Inflation," (Los Angeles: Mimeo, 1975).

[21]One well-known macrotheorist put the case to me as follows: "There is no reason to incur any unemployment in order to slow the rate of inflation." Somewhat more typical and more circumspect is Samuelson's position on the question: He remains persuaded that "even in the longest run the benefits to be derived from militant anti-inflationary policies don't carry excessive costs as far as average levels of unemployment and growth are concerned." Paul Samuelson, "Worldwide Stagflation," The Morgan Guaranty Survey, June, 1974, 9.

[22]It is reasonable to conclude, therefore, that when national policy results in a recession, the policy makers are either stupid or perverse; or both. If nothing else, the choice-theoretic approach to economic fluctuations has added to the shrillness of political debate.

[23]John Maynard Keynes, The General Theory of Employment, Interest and Money, Harbinger Books (New York: Harcourt, Brace & World, Inc., 1964), p. 192. The quote was chosen for irony, as it was part of Keynes' attack on his favorite target - 'classical economists' - for not having Ricardo's consistency of thought, in that they permitted the real world to intrude into their thoughts.

they Democrat or Republican, appear to have consistently failed in recent years. This despite the fact that advice has been freely available, and often readily heeded. One can save the phenomena by ascribing the difficulties in policy implementation to human venality of various sorts (imcompetent leaders, OPEC, etc.). The only other real alternative is to admit that society (i.e., the rulers) cannot choose the rates of inflation and of unemployment. The whole choice-theoretic approach to economic fluctuations would then have to be abandoned.

Friedrich Hayek's theory of economic fluctuations represents an alternative to the current macroeconomic paradigm. He eschewed the maximization approach in macroeconomics as he did in microeconomics.[24] The problem of economic fluctuations is treated as a problem of economic coordination. It is no accident that to introduce dis-coordination into the neoclassical world one must employ a specific, ad hoc assumption about the rigidity of some variable, usually the money wage rate.[25] Barter, general equilibrium theory deals with

---

[24] Two points must be made here. First, a new ambiguity in the term 'neoclassical paradigm' is now apparent. 'Neoclassical' economics could refer either to general equilibrium analysis only; or to the synthesis of general equilibrium theory cum income and employment theory, a la Patinkin. I am using the term in the latter sense.

Second, the reader may begin to suspect that Hayek denied that there is a viable, macroeconomic theory, distinct from micro-theoretical analysis. This would be a correct inference to draw, but one whose demonstration would be beyond the compass of this paper.

[25] For a critical discussion of this point, cf. Axel Leijonhufvud, "Keynes and the Classics" (London: The Institute of Economic Affairs, 1969), especially Part III of the First Lecture (pp. 12-18). R. W. Clower, Leijonhufvud and others do, in fact, treat economic fluctuations as evidence of economic dis-coordination. This has led one student of the work of Clower and Leijonhufuud, as well as that of Hayek, to observe that: "If enough intellectually honest scholars follow Leijonhufvud and Clower's lead in attempting an integration of 'the three-way split' (income-expenditure analysis, the Quantity Theory, and general equilibrium theory) they will re-invent the Austrian School." John B. Egger, "Information and Unemployment in the Trade Cycle," Paper delivered at the Symposium on Austrian Economics, University of Hartford, June, 1975 (Hartford: Mimeo, 1975), p. 16; footnote references omitted.

systems that are constantly moving toward (if not already in) equilibrium. If not dealing with perfectly coordinated systems, this family of theories is at least about systems with strong coordinating mechanisms. But inflations and depressions (recessions) are processes, in which systems, at least for a time, move away from equilibrium.[26] To explain dis-coordination, we need a theory of why the coordination of economic activities breaks down.[27] Hayek made essentially this latter point in a 1928 German work:

> For the essential means of explanation in static theory, which is, at the same time, the indispensable assumption for the explanation of particular price variations, is the assumption that prices supply an automatic mechanism for equilibrating supply and demand.[28]

To employ static theory to analyze situations (i.e., movements away from equilibrium), excluded by the assumptions of that theory, necessarily leads to contradictions.[29] Hayek suggested a solution in his 1928 work:

---

[26] It may be argued that general equilibrium theory deals only with the definition of equilibrium states. But as Hayek pointed out in 1935: "It is only by this assertion that such a tendency [toward equilibrium] exists that economics ceases to be an exercise in pure logic and becomes an empirical science..." Hayek, "Economics and Knowledge," p. 44.

[27] Cf. Axel Leijonhufuud, "Effective Demand Failures," The Swedish Journal of Economics, 75 (1973), 27-48; especially, 28-33.

[28] Hayek, Monetary Theory and the Trade Cycle, trans. by N. Kaldor and H. M. Croome (New York: Augustus M. Kelley, 1966), p. 43; this is a reprint of 1933 translation.

[29] "Despite the several alternative ways that we have developed to make the gulf between microtheory and macrotheory seem plausible to new generations of students, the micro-macro distinction remains basically that between models with 'perfectly coordinated' solutions and models where one or more markets reach solutions only by chance. Both sets of exercises are referred to as 'theories,' but there could be no real-world economy for which both theories are true at once." Leijonhufvud, The Swedish Journal of Economics, 1973, 30-31. Italics added, and footnote reference omitted.

> The obvious, and (to my mind) the only possible way out of this dilemma, is to explain the difference between the course of events described by static theory (which only permits movements towards an equilibrium, and which is deduced by directly contrasting the supply of and the demand for goods) and the actual course of events, by the fact that, with the introduction of money (or strictly speaking with the introduction of indirect exchange), a new determining cause is introduced. Money being a commodity which, unlike all others, is incapable of finally satisfying demand, its introduction does away with the rigid interdependence and self-sufficiency of the 'closed' system of equilibrium, and makes possible movements which would be excluded from the latter. Here we have a starting-point which fulfills the essential conditions for any satisfactory theory of the Trade Cycle. It shows, in a purely deductive way, the possibility and the necessity of movements which do not at any given moment tend towards a situation which, in the absence of changes in the economic 'data,' could continue indefinitely. It shows that, on the contrary, these movements lead to such a 'disproportionality' between certain parts of the system that the given situation cannot continue.[30]

Money is treated as an independent source of demand, which can generate its own market signals and changes, quite apart from the real factors (the 'data' of macrotheory). Money can introduce 'disproportionalities' or discoordination into the economy. It is the existence of money (i.e., monetary disturbances), that makes possible fluctuations not possible in the barter, general equilibrium model of the neoclassical paradigm. But the key element in Hayek's explanation is the non-neutrality of monetary disturbances.

The importance of the neutrality question has been virtually lost in contemporary discussions. When Hayek sparked the neutrality debate in the thirties, he was referring to short-run, disequilibrium problems. Today, the neutrality question is raised in the context of long-run, general equilibrium models, which Clower has reminded us cannot be analytically distinguished from the classical barter models, to which Hayek objected.[31] It is, of course,

---

[30] Hayek, Monetary Theory and the Trade Cycle, pp. 44-45.

[31] Cf. R. W. Clower, "The Keynesian Counter-Revolution: A Theoretical Appraisal," reprinted in Monetary Theory (Baltimore: Penguin Books, Inc., 1970), pp. 270-71.

impossible for a money economy to have the same price and output vectors as in a barter economy. Money is thus non-neutral in the long-run.[32] But in the thirties, the neutrality debate centered around an entirely different issue: the question of whether there are systematic 'distribution effects' in a process of monetary expansion or contraction. As Lutz has recently demonstrated, monetary theorists, in assuming the absence of any systematic distribution effects in these processes, exclude money by assumption from playing any causally significant role in the economic system.[33]

Hayek's theory is one in which the non-neutrality of money occupies center stage. His theory is broadly Wicksellian in nature, though it differs importantly from Wicksell's. Nor can Hayek's analysis be categorized with monetarism. It is now to Hayek's own monetary theory of economic fluctuations that we now turn.

The Hayek Theory of Economic Fluctuations

The feature of a production economy most emphasized by Hayek is that of the intertemporal complementarity of investments. The capital goods of society represent an interrelated structure - a complex mosaic. They are generally specific, and cannot be rearranged and combined anew at will. Moreover, though entrepreneurs will make the best use possible (and known) of whatever capital goods there are at their disposal, unexpected changes in the data will generally

---

[32] Patinkin demonstrates rigorously this very fact, but then ignores his own demonstration. But the real fault does not lie in his assuming the long-run neutrality of money; the assumption does no harm in his model. The fault lies in conflicting the original neutrality question with an entirely different issue; and with his consequent ignoring of the short-run non-neutrality of money. Cf. Don Patinkin, Money, Interest and Prices, 2nd ed., (New York: Harper & Row, Inc., 1965), p. 75.

[33] Cf. Friedrich A. Lutz, "On Neutral Money," in Steissler, et al., p. 116.

mean that new (and non-optimal) arrangements of existing capital goods will be continuously required. These endogenous changes in capital combinations will cause gross investment in each capital good generally to be at a different level than the depreciation of that good figured on expected replacement cost.

In Hayek's work, one finds a stock-flow problem of unusual complexity. An essential feature of capital is its heterogeneity. In the long-run, capital heterogeneity is unimportant; this is true, of course, because in the long-run plans are consistent ex hypothesi. Capital goods will be available in the desired proportion when plans are consistent. But with constantly changing data, one must not only take account of the stock-flow problems in capital theory, but also the heterogeneity of the various capital goods.[34]

In what follows, I will treat Hayek's theory of economic fluctuations as though it appeared in a coherent fashion in one place, though this is not the case. Though Monetary Theory and the Trade Cycle only appeared in English translation in 1933, while the first edition of Prices and Production had appeared in 1931, the former book was in reality written first; and it contains the monetary foundations for the theory that Hayek first outlined in full in Prices and Production.

The theory begins with a presentation of the structure of production as a delicately balanced affair, whose smooth functioning depends upon the continued consistency of plans. Since he was dealing with intertemporal equilibrium, it would have been natural to express the equilibrium condition as equality between planned saving and planned investment. But this mode of expression obscures almost as many issues as it elucidates. With capital heterogeneity and changing relative prices, given rates of saving and investment can be

---

[34] The most recent exposition of this aspect of Hayekian and Austrian capital theory appears in Ludwig M. Lachmann, Capital and its Structure (London: London School of Economics, 1956).

associated with positive or negative (or zero) net investment. In addition, as income, savings and investment are all future oriented, they are all subjective; transactors will ordinarily differ on whether net investment is positive or negative. And they will often prove to have been in error.[35] Hayek suggested that the theorist foresake the traditional, Wicksellian formulation of intertemporal equilibrium, for a more microtheoretic formulation:

> The starting point for a fully developed theory ... would be (a) the intentions of all the consumers with respect to the way in which they wish to distribute at all relevant dates all their resources (not merely their 'income') between current consumption and provision for future consumption, and (b) the separate and independent decisions of the entrepreneurs with respect to the amount of consumers' goods which they plan to provide at these various dates. Correspondence between these two groups of decisions would be characteristic of the kind of equilibrium which we now usually describe as a state where savings are equal to investments and with which the idea of an equilibrium rate of interest is connected.[36]

For transactors' plans to be consistent, the rate at which consumption output becomes available must be equal to desired rate of consumption, at the income levels generated by the production process (i.e., S = I). But as Hayek so emphasized, there are many possible methods of production, each making use of different capital combinations (i.e., different distributions of factors across time). If plans are to be coordinated, there must be enough 'free' resources (i.e., resources not committed to different productive activities) to complete a production structure already begun. In practice, this means that there must be enough <u>real resources</u> available to complete the complementary investments necessary to produce the planned consumption output with the planned time-distribution: "...Most investments are made in the

---

[35] In <u>The General Theory</u>, Keynes struggled to find an income concept free of these difficulties. Net income obviously would not do. But Keynes in effect demonstrated that his 'income' was likewise flawed by these problems, because its size depends on user cost; and in his Appendix on User Cost, Keynes demonstrates that user cost is an expectational magnitude. Cf. Keynes, <u>The General Theory</u>, pp. 52-73.

[36] Hayek, "Price Expectations, Monetary Disturbances and Malinvestments," in <u>Profits, Interest and Investment</u> (New York: Augustus M. Kelley, 1970), pp. 153-54; this is a reprint of the 1939 edition.

expectation that the supply of capital will for some time continue at the present level."[37]

Static resource allocation tells us that relative prices are indicators of relative scarcities; and interest rates summarize the relative intensity of preferences across time. But static theory is directly applicable only to perfectly coordinated systems. Hayek was asking a more fundamental question: In a dynamic, monetary economy, under what conditions would prices coordinate, instead of dis-coordinate economic activity?[38] To anticipate the conclusion somewhat, Hayek saw economic coordination as depending on the neutrality of monetary policy.

Prices communicate information only in so far as they reflect real factors. A corrollary of this proposition is that prices may communicate mis-information; and, thus, dis-coordinate decision making. In the words of one expositor of Hayek's ideas:

> [Hayek] regarded prices ...as empirical reflectors of specific circumstances and price changes as an <u>interrelated</u> series of changes in these 'signals,' which produced a gradual adaptation in the entire price structure (and hence in the outputs of different commodities and services) to the constant, unpredictable changes in the real world. <u>Pricing, in short, is seen as a continuous information-collecting and disseminating process, but it is the institutional framework that determines both the extent to which, and the degree of success with which, prices are enabled to perform this potential signalling or allocative function.</u>[39]

Market participants must react to constantly changing data, at least some of which are unexpected. To the degree that prices are reflective of

---

[37] I.e., further investments are necessary to render profitable previously made investments: "These further investments....may be either investments by the same entrepreneurs, or - much more frequently - investments in the products produced by the first group by a second group of entrepreneurs." Hayek, "Price Expectations...," pp. 142-43.

[38] Relevant here is a comment made by Hayek in another context: "....Before we can explain why people commit mistakes, we must first explain why they should ever be right." Hayek, "Economics and Knowledge," p. 34.

[39] From the editorial introduction in Sudha R. Shenoy, ed., <u>A Tiger by the Tail</u> (London: Institute of Economic Affairs, 1972), p. 8. Italics added.

real factors, they are transmitting correct information; and they thereby fulfill their allocative function. The smooth functioning of markets depends on prices being a tolerably reliable basis upon which expectations can be formed. One cannot treat the subject of intertemporal allocation without reference to the formation of expectations. Nor can one be a consistent methodological individualist and assume that expectations will always coincide in a changing world. Indeed, divergence of expectations (with consequent profits and losses) is an essential feature of a market economy. It is this very dynamic aspect of resource allocation that necessitates a price system.

But it was not the uncorrelated and independent errors of entrepreneurs to which Hayek referred in his work on economic fluctuations. These are the errors that account for profits and losses in the industries of microtheory; they represent the stimuli to more efficient resource allocation. While their continuing existence may be a condundrum for static resource allocation theory, their omnipresence is scarcely an insoluable problem for a market system.

Hayek was concerned with periodic breakdowns in the market communication process (i.e., pricing), which he saw as the cause of inflation and depressions. In either situation, the expectations of entrepreneurs are revealed to be wrong in a <u>consistent</u> way: the errors are correlated and not independent. They are They are evidence of changes in the data that have not been transmitted in the market system; <u>or</u> of price changes that indicate changes in real factors, though these changes have never in fact occurred.

The specific error made by entrepreneurs in the beginning of cyclical upswing, is to <u>overestimate</u> the savings that will be forthcoming. It is the existence of artificially low interest rates at this point that bring about the problem. And, in turn, it is expansionary monetary policy that is responsible for the too low a level of interest rates. As a result, investors will

make plans that could all be realized only if income earners planned to consume a lower fraction of their increased income than they will in fact.

Hayek's theory is neo-Wicksellian in outline, but he is to be credited with correcting Wicksell on one matter on which Wicksell apparently erred. A positive discrepancy between the equilibrium and market rates of interest does not merely result in generally rising prices (i.e., a rising price level), but in a new set of relative prices, inconsistent with the real factors (which, ex hypothesi, are not changed). With prices wrong, resource allocation - particularly capital investment - will prove to be inconsistent with the preferences of income earners. In particular, intertemporal investment plans will not be consistent with intertemporal consumption plans.

The basic, Hayekian problem is that part of the effective demand for new capital goods consists of freshly created money (credit). There is an excess demand for one class of commodities (i.e., 'capital goods'), with no corresponding excess supply of another class (i.e., consumption output). But net investment cum monetary expansion will cause factor incomes to be bid up. Factor service owners will expend this income on consumption output to a degree inconsistent with the investment programs of entrepreneurs receiving the newly available credit.

Once rising factor incomes and rising consumption demand results in some required factors of production being bid away from the uncompleted investment programs, these programs will have to be abandoned.[40] Capital will thereby

[40] It must be remembered that an investment program (project) consists of a series of interrelated and complementary investments. In the language of Prices and Production, the problem consists of an inability to complete a given structure of production. The inability to attract the required resources for completion of the structure generally renders the previous investments worthless. Capital goods, unlike consumer goods, being incapable of satisfying final demand, have value only in so far as the requisite, complementary factors of production are available in sufficient supply at costs that are expected to be recovered. Of course, if individual capital goods can be re-combined in a different structure of production, yielding consumption output sooner, then these goods will retain a positive price. Indeed, it will typically be the case that some capital goods will earn larger quasi-rents in the new structure than in the old.

be revealed to have been malinvested. Most importantly, the demand for new and replacement capital goods, of the type whose production was stimulated by the monetary expansion, will suddenly decrease. It is this latter process that constitutes a Hayekian "crisis."

Hayek's theory is obviously not one of 'synchronized inflation.' Rather the theory emphasizes the fact that new money and credit enter an economic system at definite points. The money and credit represent purchasing power, which is spent on particular goods, and which results in a particular (if unknown) sequence of price adjustments and income changes (i.e., "distribution effects"). Hayek's theory is thus part of a monetary tradition that harks back at least to Richard Cantillon in emphasizing the importance of the transmission mechanism of a monetary disturbance.[41]

Each round of monetary expansion, which occurs at a given rate, will, as a first approximation, reenforce the original disturbance. The misallocations generated by the initial disturbance are ratified by succeeding disturbances. The vector of relative prices remains at other than its equilibrium value.

It is here that factor incomes are being bid up - by the newly created money, functioning as credit available to entrepreneurs. As these factor incomes rise, consumption will rise. It must now be recalled that planned investment

---

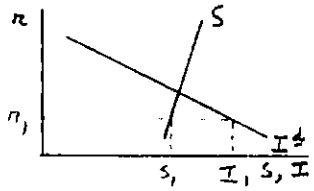
[41]"The great difficulty of this question consists in knowing in what way and in what proportion the increase of money raises prices." Richard Cantillon, Essai sur la nature du commerce en general, ed. by Henry Higgs (London: Macmillan and Co., Ltd., 1931), p. 161. For Cantillon's own explanation of those characteristic distribution effects that have come to be known as 'Cantillon Effects,' cf. pp. 161ff.

expenditures exceed planned savings.[42] Unless saving out of income changes fortuitously, consumption will be too high to maintain this rate and pattern of investment. Since this is the most controversial part of Hayek's theory, running counter to standard IS-LM analysis, I will devote some space to examining it.

In equilibrium, the level of the rate of interest depends upon desired saving and desired investment. Saving depends, inter alia, upon time preference; and investment, upon expected profit opportunities. But in the short run, the quantities of both consumer goods and capital goods are fixed. The marginal rate of return on additional money invested then largely depends on the flow of consumption expenditures, and the available consumer goods, upon which that flow may be expended. If actual consumption out of income exceeds that rate expected by entrepreneurs, then the ex post rates of return in consumer goods industries will be higher than the ex ante rates; and they will generally be higher than the ex post rates of return in capital goods industries.[43]

---

[42] As a heuristic exercise, one may consider the following diagram:



r = rate of interest
s = planned saving
I = planned investment
(All magnitudes are in nominal terms)

(I_1-S_1) is that portion of investment that is financed by monetary expansion. Ex post, savings will equal I_1. Entrepreneurs can actually effect their planned investments, because they are given the means (i.e., money) to effectively demand the real resources necessary to make the investments. That is, entrepreneurs will temporarily possess a larger fraction of the community's wealth (note that no specific group, such as owners of labor services, have been identified as losing wealth.).

The functions will change, of course, as prices change.

[43] The issue is more complicated. The changing demand conditions will alter not only the rate of discount (which affect capital goods' prices adversely), but also the quasi-rents accruing to the various capital goods (changes that can affect demand for those in a direction opposite from the effect of the change in the rate of time-discount). Cf. Hayek, Prices and Production, 2nd ed. (London: Routledge & Kegan-Paul, Ltd., 1935), pp. 75-96.

So long as ex ante saving falls short of ex ante investment, consumption at the prices ruling at the beginning of each period will be greater than was anticipated by entrepreneurs. The resulting increase in the prices of consumer goods prices represents a rise relative to factor costs; and, hence, a rise in the ex post rate of return. So long as the monetary disturbances generating the discrepancy between saving and investment lasts, so long will this inflationary process continue.[44]

It is the rise in prices of consumer goods (relative to wage rates in particular), generated by rising incomes, that brings an end to the investment boom; and, eventually, to the cyclical expansion itself. The rising rates of return in the consumer goods industries are evidence of a shortage of 'capital' - an insufficiency of savings to complete the structure of production. The real factors were, for a time, overlaid by monetary factors (i.e., an expansionary monetary policy), which hid for a time the fact that the real resources were not available to maintain the rate of investment with which the cyclical upswing began. The expansionary monetary policy did so by distorting price and interest rate signals. This, in turn, made it appear profitable to entrepreneurs to plan for more future (and, hence, less current) consumption output: the opportunity cost in terms of current period consumption output appeared lower than it was in fact. Economic activity was consequently dis-coordinated. Yet, the very cyclical expansion, which initially gives entrepreneurs a command over a larger fraction of the real resources, eventually generates rising factor incomes and consumption that brings an end to the cyclical expansion.[45]

---

[44] Cf. Hayek, The Pure Theory of Capital (Chicago: University of Chicago Press, 1941), p. 396.

[45] The crucial role of rising rates of return in consumer goods industries is explained in more detail in Hayek, "Profits, Interest and Investment," in Profits, Interest and Investment, pp. 3-71; and Hayek, "The Ricardo Effect," in Individualism and Economic Order, pp. 220-54.

To repeat, it is the rising rates of return in the consumer goods industries that make it impossible to maintain the high rate of investment.[46] Moreover, capital losses will be revealed on earlier investments.[47] While one segment of the economy - the consumer goods industries - is expanding, other segments - generally the capital goods industries - are experiencing declining demand, curtailing output and releasing factors of production. It is the inability of the expanding sectors to absorb factors as rapidly as they are being released - together with the specificity of capital goods, which may make them inappropriate to the new capital combinations - that leads eventually to declining real incomes and cyclical contraction.

Hayek's "crisis" does not depend on the attainment of 'full-employment." It is, of course, true that if, as is often implicitly or explicitly assumed in macro-models, all resources are in excess supply (at going factor rental prices), then the phenomena which Hayek detailed do not emerge. But, in general, there need only be one factor that becomes scarce at existing prices for these Hayekian effects to become operative. Once one factor, not entirely specific to one activity, becomes fully-employed-and thus in excess demand at its current factor rental price - it will be impossible for expansion in the capital goods industries to continue in the face of rising consumption demand. This fact is but an implication of the proposition that factors are used in combination; and that intermediate products, being incapable of satisfying final demand, depend for their value on the availability - at costs compensated by the prices of the products being produced - of complementary factors of production.

---

[46] In disequilibrium, the relevant rate of time-discounting becomes the (high) rates of return in the consumer goods industries. Even if rates of interest remain depressed by a monetary policy a autrance, it is to these industries that resources will flow. This simply follows from the general proposition that out of equilibrium, prices (here, interest rates) need not reflect relevant opportunity costs.

[47] This is an important conceptual point. The capital was lost the moment the investment plan was executed; the losses are revealed by the price changes.

Hayek's theory thus runs counter to that presented in accelerator models. Higher rates of growth of consumption demand may sometimes (i.e., with general resource unemployment) raise the demand for capital goods in general. But this cannot always be the case, as Hayek has again recently demonstrated:

> If it were true that an increase in the demand for consumer goods always leads to an increase in investment, even in a state of full employment, the consequence would be that the more urgently consumer goods are demanded, the more their supply would fall off. More and more factors would be shifted to producing investment goods, until, in the end, because the demand for consumer goods would have become so very urgent, no consumer goods at all would be produced. This clearly points to an absurdity in the reasoning which leads to such a conclusion.[48]

The Relevance of Hayek Today

The chief practical and immediate concern facing economists today is to find a solution to inflation. Hayek's contributions suggest that there are serious flaws in the choice-theoretic approach to inflation and unemployment theory. As a consequence, macroeconomic policy may not only be aggravating, but actually perpetuating the current inflationary recession. For Hayek has presented a convincing case that unemployment is the effect of the previous cyclical expansion. Moreover, cyclical expansions may be unsustainable, even if there is widespread resource unemployment; rising consumer goods prices may appear long before unemployment falls to a magical 'full-employment' level. It scarcely needs saying that Hayek's theory does not fall into the category of ad hoc hypotheses to explain how inflation and recession could co-exist. The existence of inflationary-recessions is an implication of a theory that Hayek first presented over 45 years ago; and his prediction ante-dates the recog-

---

[48] Hayek, "Three Elucidations of the Ricardo Effect," Journal of Political Economy, 77 (March/April, 1969), 284-85.

nition of the phenomena by some 30 or 35 years. On this ground alone, Hayek deserves his recent honor.

It is perhaps finally being recognized that price inflation is symptomatic of economic dis-coordination. Hayek's achievement is not only to have provided a theory of inflation, but a research programme in which economics is treated as the study of economic coordination. Somewhere in the solution of the paradox of value, the study of this coordination problem facing society was shunted aside. Elegance in theoretical formulation was traded for applicability. Economists have explained the pricing of a cup of tea; but they have forgotten what causes the wealth of nations. Hayek has suggested how, keeping the best of the neoclassical revolution, economists can re-discover the desirable features of classical economics; and they can finally forge a coherent, comprehensive economics, within a general social science. This is no small feat; and it is certainly one worthy of recognition.